PCI500-4D

DC/DC Compact PCI Power Supply

POWER: 500 Watt DC/DC
SIZE: 5.08" X 12.27" X 4.48"
NUMBER OF OUTPUTS: 4

C&D TECHNOLOGIES
Power Solutions
POWER ELECTRONICS DIVISION

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PRODUCT DATA SHEET



DESCRIPTION

The PCI500-4D is a modular, 500 watt, quad output power supply with wide range 48VDC input. This hot-swap supply is designed specifically for redundant applications with active current sharing on the 5V and 3.3V outputs. The PCI500 incorporates a unique architecture that supports migration of 5V requirements to 3.3V by deriving both of these outputs from a common winding on the main transformer. The PCI500 is also ideal for networking equipment, communications and computer equipment where fault-tolerance is a necessity. An AC-input counterpart is available as the PCI500-4A. All outputs have remote sense and are individually protected against overloads and short circuits. With UL/cUL approval to UL1950, VDE approval to EN60950, and CE Mark, the PCI500 provides a truly global power solution for your CompactPCI™ requirements.

FEATURES

- **36-72 VDC INPUT RANGE**
- **500 WATT CONTINUOUS OUTPUT POWER**
- **OUTPUTS INDIVIDUALLY PROTECTED AGAINST OVERLOADS; AUTOMATIC RECOVERY**
- **HOT-SWAP CAPABLE**
- **QUAD OUTPUT CONFIGURATION (5V, 3.3V, +12V, -12V)**
- **SAFETY AGENCY APPROVED**
- **NO MINIMUM LOAD REQUIRED**
- **83A COMBINED CURRENT FROM V1, V2**

AGENCY APPROVALS

c UL us VDE CE

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COMMON INPUT CHARACTERISTICS

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Input Voltage	V_{in}		36		72	V_{DC}
Inrush Current		36V_{DC} input			25	A_{PK}
		72V_{DC} input			50	A_{PK}

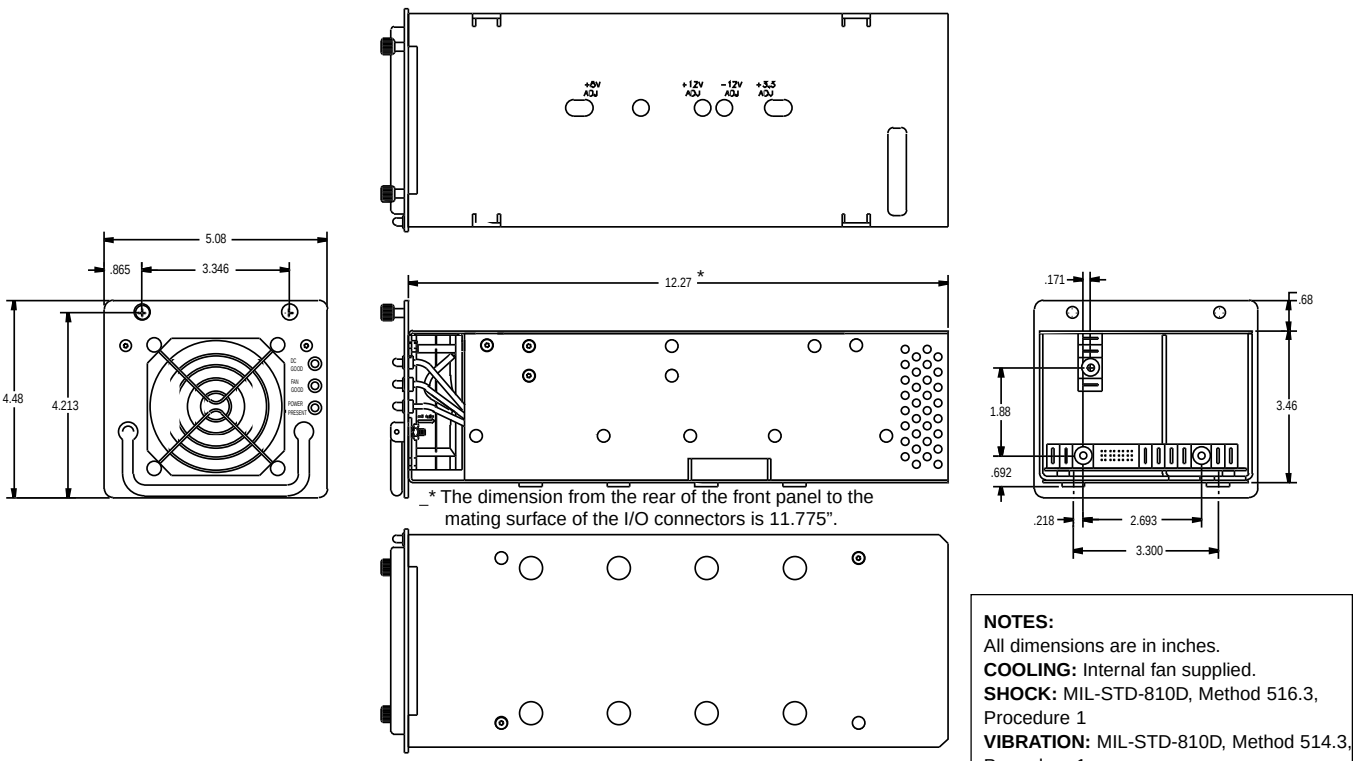
SPECIFICATION CHART

Parameter	Min	Typ	Max	Units
Temperature				
Operation	0		+40	C°
Storage	-20		+70	C°
Altitude				
Operating	up to 10,000 feet			
Non-Operating	up to 40,000 feet			
Humidity	95% max. (non-condensing)			

ENVIRONMENTAL/SAFETY

The PCI500-4D is safety certified to UL/cUL 1950, EN60950/IEC 950. It meets the Global Immunity Compliance as specified by EN61000-4-2, -3, -4 and -5, Level 3. The Power Module is CE marked in compliance with the low voltage directive.

MECHANICAL



_* The dimension from the rear of the front panel to the mating surface of the I/O connectors is 11.775".

NOTES:
All dimensions are in inches.
COOLING: Internal fan supplied.
SHOCK: MIL-STD-810D, Method 516.3, Procedure 1
VIBRATION: MIL-STD-810D, Method 514.3, Procedure 1
PIN ASSIGNMENTS: See chart on page 4.
WEIGHT: 8 lbs.

MATING CONNECTORS (BACKPLANE MOUNT)

INPUT
Elcon 278-0454-00200B9926

OUTPUT
Elcon 278-0453-00200B9925A

OUTPUT VOLTAGE/CURRENT

OUTPUT NUMBER	V_{OUT} RATED OUTPUT VOLTAGE	I_{OUT} RATED OUTPUT CURRENT	
		MIN	MAX
V1	+5.0V_{DC}	0A	74A*
V2	+3.3V_{DC}	0A	60A*
V3	+12.0V_{DC}	0A	10A
V4	-12.0V_{DC}	0A	2.5A

NOTES: Outputs 1 and 2 share common return. Outputs 3 and 4 have isolated returns.
*Combined current output of 1 and 2 not to exceed 83A.

COMMON OUTPUT SPECIFICATIONS

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Voltage Adjustment		All outputs		±5		%
Temperature Coefficient	TC	0-40°C ambient after 30 minute warm-up			0.02	%/°C
PARD		20MHz bandwidth			1% P-P or 50 mV_{P-P} which ever is greater	
Output Power		40°C max temp.			500	W

REGULATION (All Outputs)

PARAMETER	LIMIT
Line	± 0.2%
Load	±0.5%
Cross	±0.2%

COMMON OUTPUT CHARACTERISTICS

Transient Response
For a step load change of 25%, the peak output voltage excursion will not exceed 5% of nominal voltage, and will recover within 1% of nominal voltage in 400 microseconds.

Output Isolation
All outputs isolated from chassis.

Remote Sense
Remote Sense is on all outputs and is capable of compensating for 0.7V of line drop. Automatic local sensing is enabled on all outputs when remote sense leads are open. Remote sense leads are protected for open, reversed and shorted conditions.

Hot Pluggable
Active Current Share circuitry on outputs V1 and V2, together with ORing diodes on all outputs and synchronous starting circuitry, allow for hot-swap in redundant applications.

CONTROL/ALARM SIGNALS

Remote Inhibit: Referenced to RTN (Logic), Pin 40 or 43. The power supply is off when the Remote Inhibit is less than 1V, typical.

Power Present LED:

A green LED will light when DC is applied and exceeds minimum operating limits.

DC Good Indicator:

A green LED will be illuminated when all outputs are between 90% and 110% (typical) of their nominal output voltage and extinguish when any voltage is out of this range.

Fan Fail:

TTL level signal goes low when fan fails. Referenced to RTN (Logic), Pin 40 or 43. A green LED gives a visual indication that the fan is operational.

DC OK:

An open collector output signal with an internal 2.2KΩ pull up resistor is connected to the +5V output. TTL signal will go high when all outputs are between 90% and 110% of their nominal output voltage.

Sync Start

A power supply generated signal used to simultaneously start supplies operated in parallel. These pins must be tied together at the backplane in parallel/redundant (N+0 or N+n) applications when N>1. In simple redundant (1+1) or non-parallel (1+0) applications, the pin can be ignored.

Current Share Bus

A power supply generated signal used to force current sharing between supplies operated in parallel (V1 and V2). These pins must be tied together at the backplane (5V CS to 5V CS and 3.3V CS to 3.3V CS).

CONTROL/ALARM SIGNALS (cont'd)

Hot Swap Enable

This pin must be tied to the DC GND at the backplane for the power supply to operate. Since this pin is staged as the shortest in the connectors, it is a "last-make/first break" pin.

Power Supply Present

This pin presents a DC ground signal to the mating pin in the backplane. It is intended to be used by the system to detect if a power supply module is plugged into an available position.

OUTPUT PROTECTION

Over Current/Short Circuit Protection:

Outputs individually protected against overload and indefinite short circuit; automatic recovery after removal of fault.

Over Voltage Protection:

Output #1: 6.5V ±.5V_{DC} typical

Output #2 4.3V ±.4V_{DC} typical

Over Voltage Protection will latch the power supply off until input power is cycled.

Power Limit:

Auto recovery; at 530W output power typical, the unit will cycle.

Reverse Voltage Protection:

All outputs protected up to rated current.

Over Temperature Protection:

Over Temperature shutdown with automatic recovery.

PINOUT ASSIGNMENTS

OUTPUT CONNECTOR WIRING

PIN #	FUNCTION
45 to 54	+3.3V
55 to 64	+3.3V
85 to 94	+5V
95 to 104	+5V
65 to 74	GND (3.3V/5V)
75 to 84	GND (3.3V/5V)
1 to 10	+12V
11 to 20	GND (+12V)
24, 25, 28	-12V
21 to 23	GND (-12V)
29	+5V Sense
39	+3.3V Sense
41	+12V Sense
35	-12V -Sense
34 (Short)	Hot Swap Enable
33	+5V Current Share
27	+3.3V Current Share
26	+5V Sense RTN
36	+3.3V Sense RTN
38	+12V Sense RTN
32	-12V Sense RTN
44	Fan Alarm
30	DC Good
42	Remote Inhibit
37	Power Supply Present (GND)
40	GND
43	GND
31	Sync Start

INPUT CONNECTOR WIRING

PIN #	FUNCTION
1 to 10	-48 V_{DC}
11 to 20	-48 V_{DC} RTN
21 to 30 (Long)	Chassis GND

CONNECTOR PINOUT DIAGRAM

